

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
23 February 2006 (23.02.2006)

PCT

(10) International Publication Number
WO 2006/020581 A3

(51) International Patent Classification:
A61K 39/395 (2006.01) C12P 21/08 (2006.01)
A61K 38/17 (2006.01)

(21) International Application Number:
PCT/US2005/028166

(22) International Filing Date: 9 August 2005 (09.08.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/915,214 9 August 2004 (09.08.2004) US
11/185,907 19 July 2005 (19.07.2005) US

(71) Applicants (for all designated States except US): ELAN PHARMACEUTICALS, INC. [US/US]; 800 Gateway Boulevard, South San Francisco, California 94080 (US). THE REGENTS OF THE UNIVERSITY OF CALIFORNIA [US/US]; 1111 Franklin Street, 5th Floor, Oakland, California 94607 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): SCHENK, Dale, B. [US/US]; 1542 Los Altos Drive, Burlingame, California 94010 (US). MASLIAH, Eliezer [MX/US]; 4661 Corte Mar Corazon, San Diego, California 92130 (US). BUTTINI, Manuel, J. [LU/US]; 8 Admiral Drive, No. 131, Emeryville, California 94608 (US). CHILCOTE, Tamie, J. [US/US]; 187 Magellan Avenue, South San Francisco, California 94116 (US). ROCKENSTEIN, Edward [US/US]; 851 Fordham Avenue, Chula Vista, California 91913 (US). GAMES, Kate, Dora [US/US]; 503 Alameda de las Pulgas, Belmont, California 94002 (US).

(74) Agents: APPLE, Randolph, T. et al.; TOWNSEND AND TOWNSEND AND CREW LLP, Two Embarcadero Center, 8th Floor, San Francisco, California 94111-3834 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(88) Date of publication of the international search report:
22 March 2007

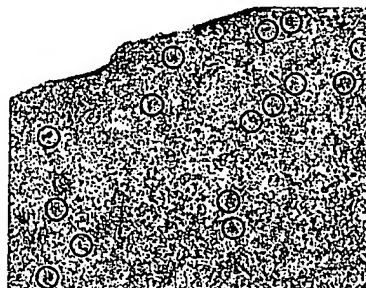
(15) Information about Correction:

Previous Correction:

see PCT Gazette No. 13/2006 of 30 March 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PREVENTION AND TREATMENT OF SYNUCLEINOPATHIC AND AMYLOIDOGENIC DISEASE



Contralateral side



Ipsilateral side

(57) Abstract: The invention provides improved agents and methods for treatment of diseases associated with synucleinopathic diseases, including Lewy bodies of alpha-synuclein in the brain of a patient. Such methods entail administering agents that induce a beneficial immunogenic response against the Lewy body. The methods are particularly useful for prophylactic and therapeutic treatment of Parkinson's disease.

WO 2006/020581 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/28166

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8): A61K 39/395(2007.01),38/17(2007.01);C12P 21/08(2007.01)

USPC: 424/133.1,139.1;530/387.3;435/70.21;514/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/133.1,139.1; 530/387.3; 435/70.21; 514/12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2004/041067 A2 (ELAN PHARMACEUTICALS, INC.), 21 May 2004 (21.05.2004), paragraphs [0051], [0054], [0059], [0067], [0070], [0076-0079], [0173].	9-14, 28-29, 32-36, 42, 44-45
X, P	WO 2005/047860 A2 (ELAN PHARMACEUTICALS, INC.), 26 May 2005 (26.05.2005), paragraphs [0007-0017], [0046-0049], [0073].	25-29, 47-48
X	US 2002/0094335 A1 (CHALIFOUR et al.), 18 July 2002 (18.07.2002), paragraphs [0017], [0020], [0099], [0126], [0147], [0154-0157].	32-33, 35-36, 44-45
A	US 2002/0197258 A1 (GHANBARI et al.), 26 December 2002 (26.12.2002), entire document.	1, 3-6, 9-14, 22-23, 25-29

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

27 October 2006 (27.10.2006)

Date of mailing of the international search report

14 DEC 2006

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201

Authorized officer

Kimberly A. Ballard

Telephone No. 571-272-0500

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/28166

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 2,7,8,15,16,30,31 and 46
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
Please See Continuation Sheet
3. ☒ Claims Nos.: 7,8,15,17-21,24 and 43
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of any additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

- Remark on Protest**
- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
 - ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
 - ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US05/28166

Continuation of Box II Reason 2:

Claim 2 depends from itself and is therefore indefinite.

Claims 7, 8, 15, 16, 30, and 31 have missing information regarding the ATCC accession number for the monoclonal antibodies or hybridomas recited therein.

There is no claim 46.

Continuation of B. FIELDS SEARCHED Item 3:

EAST (PGPUB, USPAT, USOCR, DERWENT), MEDLINE, BIOSIS, EMBASE, SCISEARCH, CAPLUS

search terms: (alpha)-synuclein, antibod?, immunoglobulin, neurodegenerat?, parkinson?, 6H7, 8A5